



ORGANIC NITROGEN  
**Milorganite**<sup>®</sup>  
FERTILIZER

# MILORGANITE SAFETY

## Trusted for over 90 years

Your safety is an extremely important consideration in the production of Milorganite. Milorganite meets the most stringent criteria imposed on any fertilizer product for health, safety and environmental concerns. Milorganite can be used with confidence for all your fertilizing needs, including use on all grass species, trees, shrubs, flowers, and vegetable gardens.

### U.S. EPA and State Standards

Milorganite is intensively analyzed to ensure compliance with all applicable standards established by the U.S. Environmental Protection Agency (EPA) and every state in which Milorganite is sold. Metals and PCBs are analyzed daily. As shown by the table, metals concentrations in Milorganite are much less than allowed for an Exceptional Quality product.

### The Truth about Metals

Heavy metals like cadmium, copper and zinc are naturally occurring in our everyday environment. Several of these metals are actually micronutrients that are needed in small amounts for plants to grow and reproduce. The concern with heavy metals in fertilizer is keeping their concentrations under limits deemed safe by EPA regulators. Milorganite is the “gold standard” of biosolid fertilizers, with over 90 years of experience producing a product that is both safe and effective.

### Heat Drying Kills Pathogens

Milorganite is heat-dried in twelve rotary dryers that operate between 900°F and 1200°F. This extreme heat and dryness kills pathogens.

Metals and Fertilizer Micronutrients  
Milorganite vs. U.S. EPA Limits

Metals and Fertilizer Micronutrients	U.S. EPA Exceptional Quality Limits	2015 Milorganite Average
Arsenic	41 mg/kg	3.5 mg/kg
Cadmium	39 mg/kg	0.93 mg/kg
Chromium	No Limit	230 mg/kg
Copper*	1,500 mg/kg	250 mg/kg
Lead	300 mg/kg	44 mg/kg
Mercury	17 mg/kg	0.48 mg/kg
Molybdenum*	75 mg/kg	11 mg/kg
Nickel	420 mg/kg	30 mg/kg
Selenium	100 mg/kg	4.2 mg/kg
Zinc*	2,800 mg/kg	540 mg/kg

\* essential micronutrients

**ALL PURPOSE** lawns | flowers | vegetables | trees | shrubs

## No Salts or added Pesticides

Milorganite is formulated without salts or pesticides. The key elements of Milorganite are simple: organic matter and nutrients. It will not burn. It will not hurt your family or the environment.

Some dogs have a strong interest in Milorganite. While not toxic, the consumption of large amounts may cause digestive problems. Keep open bags away from dogs. After spreading, monitor your dog to determine interest. Watering may reduce the attraction.

## Slow Release Phosphorus

Phosphorus in runoff can cause problems in lakes and streams. However, phosphorus is an essential nutrient and is an important part of any fertilizing program. The challenge is getting the phosphorus right. Unlike the phosphorus in synthetic fertilizers, the phosphorus in Milorganite releases slowly, as plants need it. The phosphorus in Milorganite is predominantly insoluble: It stays in your lawn or garden helping your plants grow, instead of moving into groundwater or stormwater where it can cause problems.

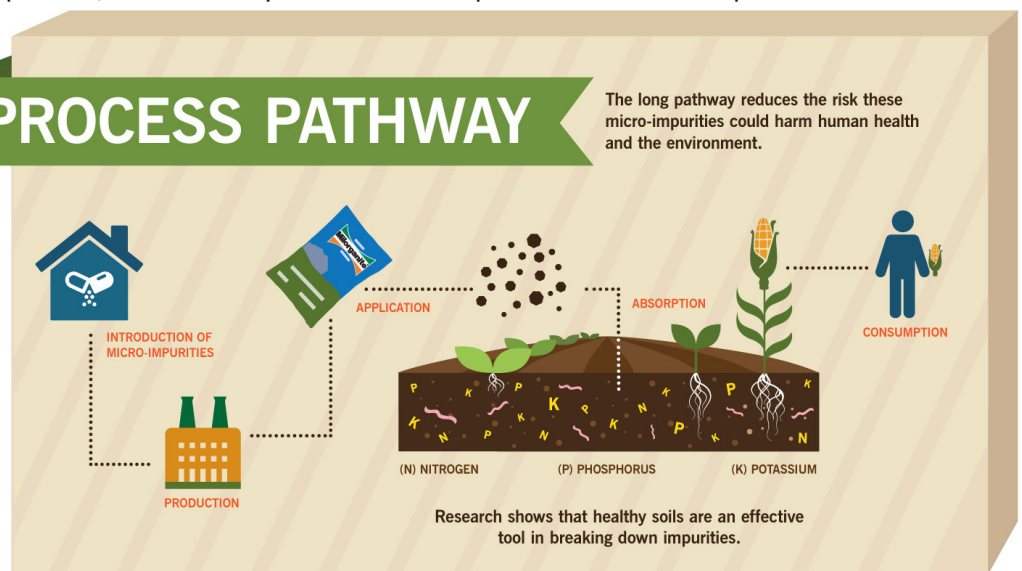
## Pharmaceuticals and Personal Care Products

As a product of the water reclamation process, biosolids may contain various pharmaceuticals and personal care products. Milorganite is a leader in investigating the risk caused by these compounds.

Although detectable, concentrations of these compounds are extremely small. These micro-impurities have a long pathway to travel before human exposure: from water reclamation to Milorganite production to soil application to plant growth to harvest to consumption. This long process reduces the risk that these micro-impurities will harm human health and the environment.

For example, Milorganite has studied the fate of Triclosan, a commonly used anti-bacterial and anti-fungal agent used in products ranging from soap to toothpaste. The study measured the amount of Triclosan in corn, tomatoes, carrots, and lettuce grown using Milorganite®. While some Triclosan did appear in the vegetables, concentrations were extremely low, with corn having the highest concentration. A 154 pound person could eat up to 1,249 pounds of corn a day without any adverse effect. Thus, the risk from Triclosan exposure from Milorganite® is extremely small.

### PROCESS PATHWAY



Item Tested	% Triclosan
Toothpaste (Colgate®)	0.30%
Milorganite®	0.0002%
Sweet Corn Fertilized with Milorganite®	0.000003%

\*2013, Dr. George Snyder-University of Florida Uptake of the pharmaceutical triclosan in vegetables fertilized with a triclosan containing biosolid